

## 13. Radiation Protection Program\_

### 13A. Operating and Emergency Procedures

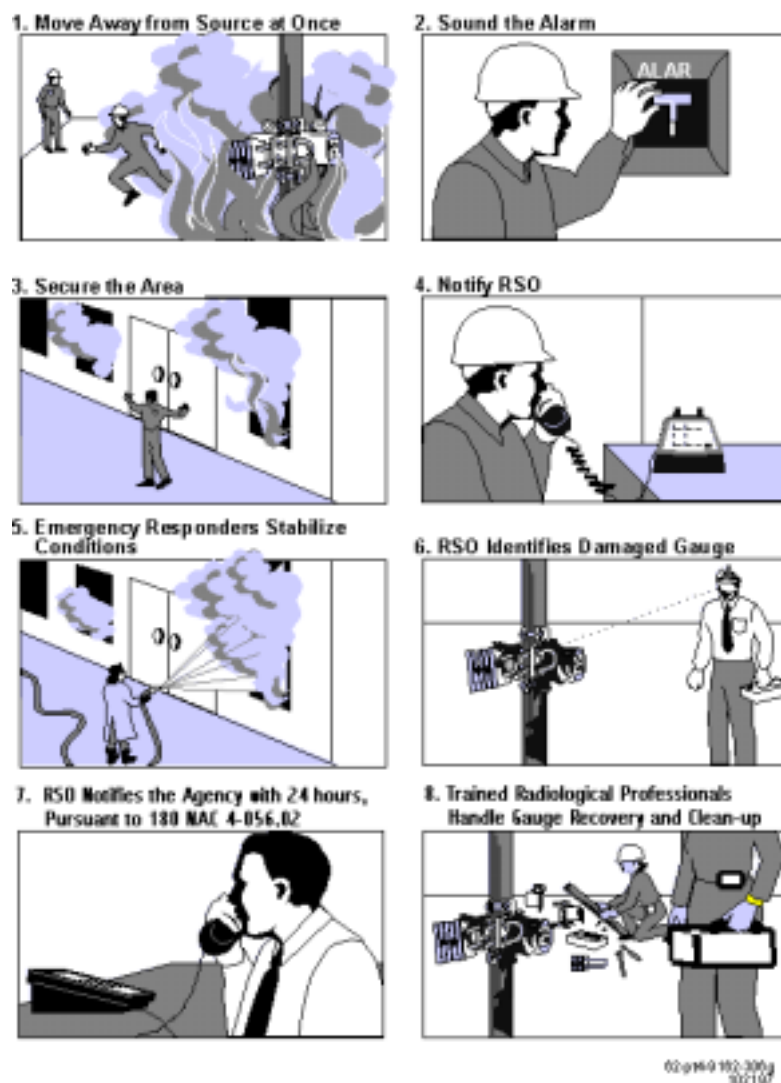
Regulations: 180 NAC 1-011, 180 NAC 3-016.02, 180 NAC 3-026, 180 NAC 4-004, 180 NAC 4-031, 180 NAC 4-032, 180 NAC 4-046 thru 4-048 and 180 NAC 10.

**Criteria:** *Each applicant must do the following:*

- *Develop, implement, and maintain operating and emergency procedures which ensure compliance with 180 NAC 10 “Notices and Instructions and Reports to Worker, Inspections” and 180 NAC 4 “Standards for Protection Against Radiation.”: containing the following elements:*
  - Instructions for operating the gauge*
    - *Instructions for performing routine cleaning and maintenance (e.g., calibration and lubrication) according to the manufacturer's or distributors recommendations and instructions*
    - *Instructions for testing each gauge for the proper operation of the on-off mechanism (shutter) and indicator, if any, at intervals not to exceed 6 months or as specified in the SSD certificate*
    - *Instructions for lock-out procedures, if applicable, that are adequate to assure that no individual or portion of an individual's body can enter the radiation beam*
    - *Instructions to prevent unauthorized access, removal, or use of fixed gauges*
  - Steps to take to keep radiation exposures ALARA*
  - Steps to maintain accountability (i.e., inventory)*
    - *Instructions to ensure that non-routine operations such as installation, initial radiation survey, repair and maintenance of components related to the radiological safety of the gauge, gauge relocation, replacement and disposal of sealed sources, alignment, or removal of a gauge from service are performed by the manufacturer, distributor or person specifically authorized by the Agency, NRC or an Agreement State*
  - Steps to ensure that radiation warning signs are visible and legible.*
- *Develop, implement, and maintain emergency procedures for gauge malfunction or damage containing the following elements for each type of fixed gauge:*
  - Stop use of the gauge.*
    - *Restrict access to the area.*
    - *Contact responsible individuals. (Telephone number for the RSO, AU's the gauge manufacturer or distributor and fire department. Include the HHS R & L emergency response phone numbers which includes the Nebraska State Patrol's 24 hour emergency number.)*
    - *Do not attempt repair or authorize others to attempt repair of the gauge except as specifically authorized in a license issued by the Agency , an Agreement State or NRC.*
    - *Require timely reporting to Agency pursuant to 180 NAC 4-046 – 4-048, and 180 NAC 3-026.*
  - Take additional steps, dependent on the specific situations.*

- *Provide copies of operating and emergency procedures to all gauge users.*
- *Post copies of operating and emergency procedures at each location of use or if posting procedures is not practicable, post a notice which briefly describes the procedures and states where they may be examined*

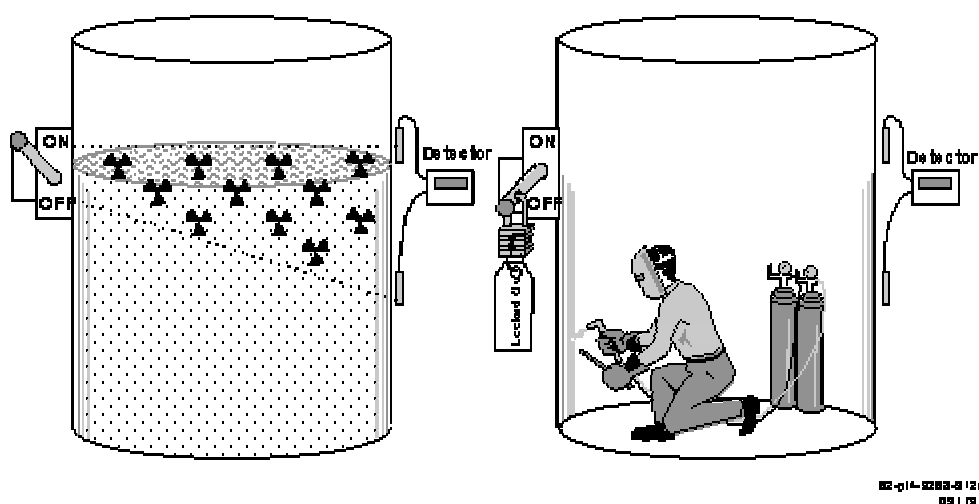
Operating and emergency procedures should be developed, maintained, and implemented to ensure that gauges are used only as they were designed to be used, control and accountability are maintained, and radiation doses received by occupational workers and members of the public are ALARA. Copies of operating and emergency procedures should be provided to all gauge users. In addition, licensees must post current copies of operating and emergency procedures applicable to licensed activities at each site. If posting of procedures is not practicable, the licensee may post a notice which describes the documents and states where they may be examined. Improper operation could lead to the damage or malfunction of a gauge and elevated exposure rates in the gauge's immediate vicinity. See Appendix F for an example of operating and emergency procedures. Figure 6 illustrates proper response to fire involving a fixed gauge. Emergency procedures should be developed to address a spectrum of incidents (e.g., fire, explosion, mechanical damage, flood, or earthquake).



**FIGURE 6 Proper Handling of Incident. Licensee personnel implement emergency procedures when a fire melts the lead shielding of a gauge producing the potential for elevated exposure levels.**

The Agency considers security of licensed material extremely important and lack of security is a significant violation for which licensees may be fined. Although most fixed gauges are difficult to move, the licensee must prevent unauthorized access, removal, or use of the gauge. Licensees are responsible for ensuring that gauges are secure and accounted for at all times (e.g., during plant modifications, change in ownership, staffing changes, or after termination of activities at a particular location).

The Agency must be notified when gauges are lost, stolen, or certain other conditions occur. The RSO must be proactive in evaluating whether Agency notification is required. Refer to Appendix N and the regulations (180 NAC 4-046 thru 4-048, and 180 NAC 3-026) for a description of when and where notifications are required.



**FIGURE 7 Lock-out Procedures. Typical lock-out procedures include locking the shutter into the "off" position and tagging the shutter control mechanism to indicate the gauge is locked-out.**

When the distance or air gap between the source and detector permits entry of all or a portion of a person's body into the primary radiation beam, as seen in Figure 7, licensees must develop lock out procedures. Lock-out procedures encompass locking the on-off or shutter mechanism into the off position or otherwise controlling the radiation beam or using any other means of preventing an individual or a portion of an individual's body from entering the radiation beam during maintenance, repairs, or work in, on, or around the process line (e.g., bin, tank, hopper, pipe, or conveyor belt) where the device is mounted. The on-off or shutter control mechanism should be tagged to indicate that the gauge is locked out. A warning sign should be posted at each entryway to an area where it is possible to be exposed to the primary beam. In addition to providing a warning, the sign should give safety instructions, e.g., "contact the RSO before entering this vessel." Lock-out procedures should specify who is responsible for performing them.

**Response from Applicant:** Provide one of the following:

- A statement that: “We have implemented and will maintain the operating and emergency procedures of Appendix F, Regulatory Guide 3.13 ‘Radioactive Material Guidance for Fixed Gauges Licenses.’ We will also provide “lock-out” procedures. Copies of these procedures will be provided to all authorized users and at each job site.”  
(Note: The licensee will copy these Operating and Emergency Procedures from Regulatory Guide 3.14. The licensee will add the information needed to individualize the procedure will be completed along with any additional procedures indicated.)

**OR**

- A statement that: “We have implemented and will maintain operating and emergency procedures submitted with this application. They meet the criteria of section titled ‘Radiation Protection Program – Operating and Emergency Procedures in Regulatory Guide 3.13 Radioactive Material Guidance for Fixed Gauges Licenses.’ Copies of these procedures will be provided to all authorized users and at each job site.”